

C50715

Cu-Sn-Fe-P ALLOY

1、Characteristic：

- Having high strength and good workability
- High heat resistance temper and easy plating
- Applicable to Automobile terminals、electrical terminals

2、Chemical Composition：

| Alloy | Chemical Composition % | | | |
|--------|------------------------|---------|-----------|-------------|
| | Cu | Sn | Fe | P |
| C50175 | Rem. | 1.7~2.3 | 0.05~0.15 | 0.025~0.040 |

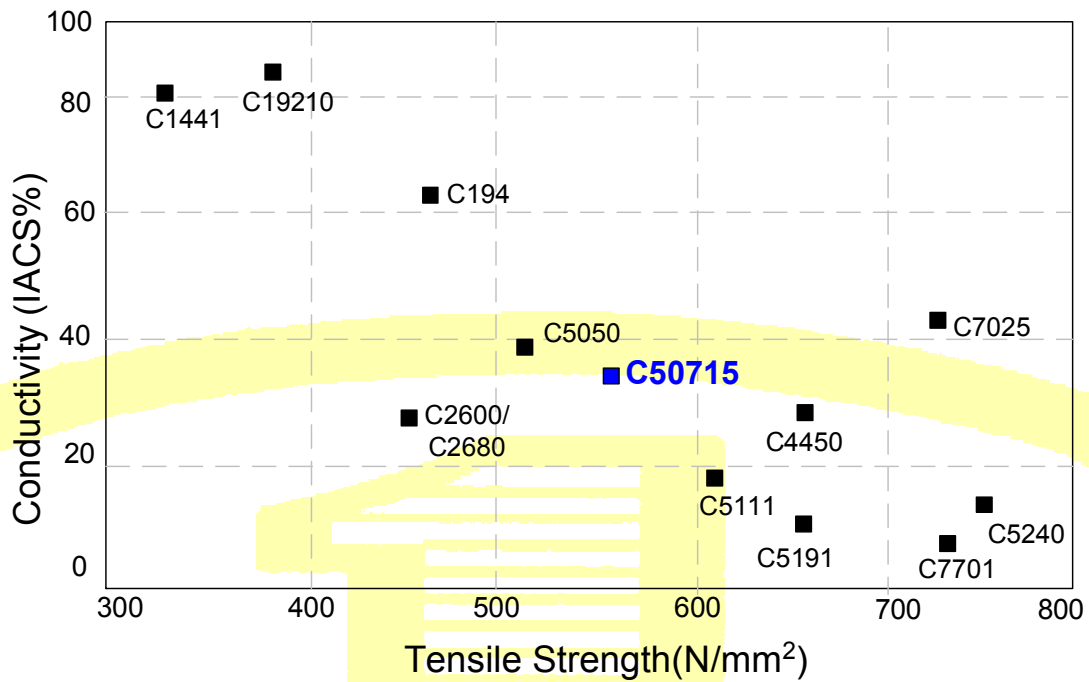
3、Physical Properties：

| Characteristic | C50715 |
|---|--------|
| Melting point °C (Liquid) | 1068 |
| Melting point °C (Solid) | 1060 |
| Density (gm/cm ³) (20°C) | 8.9 |
| Coefficient of Thermal Expansion (10 ⁻⁶ /°C 20°C~100°C) | 17.6 |
| Thermal Conductivity (cal/cm ² /cm/sec/°C 20°C) | 0.36 |
| Electrical Conductivity (Annealing) (IACS%) | 35 |
| Modulus of Elasticity (kgf/mm ²) | 12200 |

4、Mechanical Properties：

| Alloy | Temper | Mechanical Properties | | |
|--------|--------|-------------------------|--------|----------|
| | | TS (N/mm ²) | EL (%) | Hv(500g) |
| C50715 | 1/2 H | 390~540 | ≥ 10 | 140~170 |
| | 3/4 H | 500~590 | ≥ 7 | 160~185 |
| | H | 540~620 | ≥ 5 | 170~200 |
| | EH | ≥ 590 | — | ≥ 180 |

5、Characteristic location :



6、Bending characteristic :

(1) 90° bending test : ($t \leq 0.3$)

Test method : JIS Z 2248

| Alloy | Temper | Direction | R/t | | | | | | R/t (min) | |
|--------|--------|-----------|-----|-----|-----|-----|-----|-----|-----------|-----|
| | | | 0 | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | | 3.0 |
| C50715 | 1/2H | Good way | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 0 |
| | | Bad way | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | 0 |
| | 3/4H | Good way | ▲ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | 0.5 |
| | | Bad way | ▲ | △ | ◎ | ◎ | ◎ | ◎ | ◎ | 0.5 |
| | H | Good way | ▲ | ▲ | ○ | ◎ | ◎ | ◎ | ◎ | 1.0 |
| | | Bad way | ▲ | ▲ | △ | ◎ | ◎ | ◎ | ◎ | 1.0 |

Determination : ▲ : Crack(Failed) 、 △ : Big wrinkles(Qualified) 、 ○ : Small wrinkles(Qualified) 、 ◎ : Good (Qualified)

(2) 180° bending test : ($t \leq 0.3$)

Test method : JIS Z 2248

| Alloy | Temper | Direction | R/t | | | | | | R/t (min) | |
|--------|--------|-----------|-----|-----|-----|-----|-----|-----|-----------|-----|
| | | | 0 | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | | 3.0 |
| C50715 | 1/2H | Good way | ▲ | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | 0.5 |
| | | Bad way | ▲ | ▲ | △ | ○ | ◎ | ◎ | ◎ | 1.0 |
| | 3/4H | Good way | ▲ | ▲ | ○ | ◎ | ◎ | ◎ | ◎ | 1.0 |
| | | Bad way | ▲ | ▲ | ▲ | △ | ○ | ◎ | ◎ | 1.5 |
| | H | Good way | ▲ | ▲ | ▲ | ○ | ○ | ◎ | ◎ | 1.5 |
| | | Bad way | ▲ | ▲ | ▲ | ▲ | △ | ○ | ◎ | 2.0 |

Determination : ▲ : Crack(Failed) 、 △ : Big wrinkles(Qualified) 、 ○ : Small wrinkles(Qualified) 、 ◎ : Good (Qualified)